



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,838	01/18/2001	Stephen William McCahon	P 6048.10001	9260
7590	01/23/2004		EXAMINER	CHOW, DOON Y
William A. Birdwell Birdwell, Janke & Durando, P.L.C. 1100 SW Sixth Avenue Suite 1400 Portland, OR 97204			ART UNIT	PAPER NUMBER
			2675	DATE MAILED: 01/23/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/765,838	MCCAHLON ET AL.
	Examiner Dennis-Doon Chow	Art Unit 2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 15 September 2003.

2a) This action is FINAL.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,3-32,34-36,38,39 and 42-48 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,3-32,34-36,38,39 and 42-48 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_

4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 3-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-16 are depended from claim 2 which is cancelled by the amendment filed 9/15/03.

### ***Election/Restrictions***

2. Newly submitted claims 36, 38-39 and 42-43 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 36, 38-39 and 42-43 are directed to an interface for controlling an apparatus by moving a hand. Claims 36, 38-39 and 42-43 belong to a species which is different from the originally claimed species. The originally claimed species includes an interface for controlling an apparatus by rotating a ball surface (claim 35) or by moving a device over a diffusely reflecting surface (claim 34). Claims 1, 46 and 48 are generic.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 36, 38-39 and 42-43 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokubo (5530456) in view of Nolte et al. (6342721).

Regarding to claims 1, 17-18, 21, and 26-29, Kokubo discloses a device for producing a control signal to control an apparatus based on the movement of a reflecting surface, comprising: a light source for illuminating the reflecting surface, wherein the reflecting surface is a portion of a human hand; a sensor for receiving from the reflecting surface a pattern of light; and an interface circuit for producing the control signal from the sensor electrical signal.

Kokubo does not disclose the sensor being a photo-emf sensor.

Nolte discloses a photo-emf sensor that can be constructed in many different ways (see figures). The emf sensor comprises a plurality of electrodes and a gap between adjacent electrodes. The plurality of electrodes can be constructed in many different ways (see figures 1-3, and 8-11).

It would have been obvious to one ordinary skill in the art to use Nolte's photo-emf sensor in Kokubo's device as the sensor because Nolte's emf sensor improved responsibility at constant power and detection area without the need to focus tightly, therefore, allowing the optimum beam crossing angle (col. 1, lines 61-65).

Regarding to claims 19-20, Kokubo does not explicitly disclose the light source produces linearly polarized light. However, using a light source that produces linearly polarized light in an input device is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to use the well known light source in Kokubo's device because this well known light source works as well as the Kokubo's light source.

Regarding to claims 22-23, using optics for directing or enhancing light in an optical input device is well known in the art. It would have been obvious to one of ordinary skill in the art to use the known optics in Kokubo's device for the purpose of directing or enhancing light.

Regarding to claim 24-25, amplifying and filtering a sensor signal in an optical input device are well known in the art. It would have been obvious to one ordinary skill in the art to use the well known amplifying and filtering means in Kokubo's input device because the weak sensor signal generated by Kokubo's device needs to amplify and filter so that a stronger and purer sensor signal can be generated.

Regarding claims 30 -32, using an optical input device to control a display device for representing a 3D image, a robotic device, or virtual reality device is well known in the art, Thus, it would have been obvious to one of ordinary skill in the art to use Kokubo's optical input device to control a display device for representing a 3D image, a robotic device, or a virtual reality device.

5. Claims 1 and 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bidiville et al. (5288993) in view of Nolte et al. (6342721).

1, 22-23, and 26-29, Bidiville discloses a device (mouse, trackball, column 2, lines 33-36) for producing a control signal to control an apparatus based on the movement of a reflecting surface, comprising: a light source for illuminating the reflecting surface; a sensor for receiving from the reflecting surface a pattern of light; and an interface circuit for producing the control signal from the sensor electrical signal.

Bidiville does not disclose the sensor being a photo-emf sensor.

Nolte discloses a photo-emf sensor that can be constructed in many different ways (see figures). The emf sensor comprises a plurality of electrodes and a gap between adjacent electrodes. The plurality of electrodes can be constructed in many different ways (see figures 1-3, and 8-11).

It would have been obvious to one ordinary skill in the art to use Nolte's photo-emf sensor in Bidiville's device as the sensor because Nolte's emf sensor improved responsibility at constant power and detection area without the need to focus tightly, therefore, allowing the optimum beam crossing angle (col. 1, lines 61-65).

Regarding to claims 17-21, Bidiville does not explicitly disclose the light source comprising a laser or a coherent light source produces linearly polarized light. However, using a light source that comprises a laser or a coherent light source produces linearly polarized light in an input device is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to use the well known light source in Bidiville's device because this well known light source works as well as the Bidiville's light source.

Regarding to claim 24-25, amplifying and filtering a sensor signal in an optical input device are well known in the art. It would have been obvious to one ordinary skill in the art to use the well known amplifying and filtering means in Bidiville's input device because the weak sensor signal generated by Bidiville's device needs to amplify and filter so that a stronger and purer sensor signal can be generated.

Regarding claims 30 -32, using an optical input device to control a display device for representing a 3D image, a robotic device, or virtual reality device is well known in the art, Thus, it would have been obvious to one of ordinary skill in the art to use Bidiville's optical input device to control a display device for representing a 3D image, a robotic device, or a virtual reality device.

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 34 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Piot et al. (6256016).

Piot discloses an input device for controlling an apparatus by moving the device over a diffusely reflecting surface, comprising: a case; a support member for movably supporting the case on the surface; a coherence light source disposed within the case for illuminating the surface; a sensor for receiving a corresponding moving speckle pattern of light and producing a sensor signal related to the movement; and an interface circuit for producing the control signal from the sensor signal.

8. Claims 35, 44, 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bidiville et al. (5288993) in view of Piot et al.

Bidiville discloses a device (mouse, trackball, column 2, lines 33-36) for producing a control signal to control an apparatus based on the movement of a reflecting surface, comprising: a LED's source for illuminating the reflecting surface, wherein the LED's source inherently includes a coherent light source; a sensor for receiving from the reflecting surface a pattern of light; and an interface circuit for producing the control signal from the sensor electrical signal.

Bidiville does not explicitly disclose the light source comprising a coherent light source. However, using a coherent light source in an input device is well known in the art as shown by Piot et al. Therefore, it would have been obvious to one of ordinary skill

in the art to use the well known light source in Bidiville's device because this well known light source works as well as the Bidiville's light source.

***Response to Arguments***

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis-Doon Chow whose telephone number is 703-305-4398. The examiner can normally be reached on 8:30-6:00, Alternate Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on 703-305-9720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

D. Chow  
January 20, 2004



DENNIS-DOON CHOW  
PRIMARY EXAMINER